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REVIEW

The Flowering Plants and Ferns of Arizona. By THOMAS H. KEARNEY AND ROBERT H. PEEBLES. United States Government Printing Office, Washington, D. C. 1942. \$2.00.

The flora of Arizona was studied with great interest and effectiveness by Asa Gray, John Torrey, Sereno Watson, and George Engelmann, and the half-century- and century-old papers and reports of this group of great systematic botanists have been the most useful works for general identification of plants from all but certain segments of the State.

"The Flowering Plants and Ferns of Arizona" fills a demand of long standing for an up-to-date, comprehensive study of the flora of Arizona as a unit. The book is based upon a sound piece of research, and it is particularly valuable for inclusion and evaluation of the numerous papers on special groups published prior to the time the book went to press in 1940 and for its references to these papers. This manual should serve as the foundation and

the stimulus for further study of a flora of unusual interest investigated so far only by travellers and a handful of resident botanists and by no means thoroughly known. The long experience of the authors in Arizona makes their work carry unusual authority, and the combination of this field experience with carefully considered organization of taxonomic units is a happy one. Treatment of particular families or genera by twenty-two specialists adds much to the value of the book, although, as is inevitable in such cases, it introduces some variation in the weight accorded taxonomic categories, such as genera, species, and varieties. A section of the introduction entitled "The Vegetation of Arizona" by Forrest Shreve summarizes the results of long and intensive study of the Arizona flora by one of its most critical and thorough students.

Valid criticisms of this book are few and minor. Division of the index into two parts, one for popular and one for scientific names may have some advantages, but there is a tendency to "land" in the wrong index, and a longer index including both of these would be scarcely more difficult to use for either lay or technical names. To one familiar with the excellent photography of the group at the U. S. Field Station at Sacaton and particularly with the photographs taken by Mr. Peebles, there is disappointment in some of the illustrations, although others are excellent. It is probable that the weak contrasts in some of the half-tones are to be attributed to poor reproduction of the originals.

Lack of descriptions of species is unfortunate but not to be criticized, since production of the first flora of a state is a task so great that it might have been impossible to accomplish if descriptions had been a part of it. A strong compensating factor is the thoroughness, fullness, and reliability of the keys, which are in excellent contrast to those of most of the descriptionless floras of the past. Concise statements of carefully selected characters of the genera contribute to the value of the work.

The interpretation of species cannot be classified as either "liberal" or strongly "conservative" (in the botanical vernacular), although it tends somewhat toward the latter. The unusually unimportant rank assigned to varieties in the makeup of the book will be disappointing to some but probably pleasing to others.—LYMAN BENSON, Department of Botany, Agricultural Experiment Station, University of Arizona, Tucson.